

Conference Review



INTERNATIONAL SYMPOSIUM ON ANCIENT CERAMICS 1992: A REVIEW

A WEEK-LONG CONFERENCE on ancient ceramics, titled "Science and Technology of Ancient Ceramics '92," was held in Shanghai from 4 to 8 November 1992, under the organization of the Shanghai Research Society of Science and Technology of Ancient Ceramics. The conference was the fourth in a series of symposia on ancient ceramics sponsored by the Shanghai Institute of Ceramics, which is known primarily as a research center for modern ceramics. Eighty-one papers were presented during the conference on themes such as scientific and technological insights (59 papers) and archaeological discovery and interpretation (22 papers). The proceedings, one in Chinese and another in English (656 pages), were published in time for the conference. Some papers presented as posters will be published later as an addendum. After the meeting many participants embarked on a 1-week tour of museums, special collections, ancient kiln sites, and factories in Nanjing, Yangzhou, Zhenjiang, and Yixing. The tour met deluxe standards of service, food, and accommodation in every way.

One remarkable and synergistic aspect of these conferences is the interaction among various disciplines. For instance, a scientist's report of a technical study that purports to reconstruct manufacture and firing of ancient ceramic wares, receives immediate scrutiny from art historians and archaeologists familiar with problems in recent dating and excavation, as well as by factory personnel who have had experience in replicating many wares and who can point out critical discrepancies. Replication of famous ware types is an important element among Chinese exports, and the conference was well attended by industry. The technological sophistication of Chinese art historians and archaeologists is also considerable. The philosophical bent of Chinese museums is such that the critical results of technical studies are regularly reported in labels and often at the backs of display cases along with artistic masterpieces and broken artifacts. Unlike American museums, where such technical information usually is omitted in the belief that the public would not be interested, tourists and museum-goers in China enthusiastically support exhibits in which geological, technological, and scientific information is incorporated succinctly in to the displays. Thus, the discussions at the conference had both economic and scholarly motives. Such lively interdisciplinary discussion is intellectually demanding; the people from museums, archaeological and scientific institutes, and factories are all amazingly knowledgeable and most have learned through four conferences how to speak one another's "language," what each considers impor-

tant, and how much an integrated approach can add to the appreciation of ancient ceramics.

Contrary to the expectations of many prospective attendees, the content of the conference was not limited to Chinese or even East Asian ceramics. The variety of topics included new technical information on Islamic ceramics of the seventh to fifteenth centuries; the relationship of aesthetics and technology in early American salt-glazed stoneware; technical analysis of an Inca vessel; the manufacture and raw materials of Renaissance glazed terracotta sculpture; the dating of tiles from Isfahan, Iran, using trace element data; and a most interesting study (appearing only in the Chinese proceedings) of the interaction of Yixing teapots with organic constituents of tea. The report provided measurements of the variation of effects found with long-used specimens of this famous tea ware manufactured since the fourteenth century A.D., in Yixing to the north of Shanghai. In addition, "ceramics" were broadly defined to include a wide variety of materials and topics: Indian glass trade beads, Han blue and purple pigments on ceramics and special colored sticks (the function of which is a subject of speculation); ceramic colorants for Ru and Jun wares made from metal slags; and studies of refractories, plasters, and enamels. Most of the discussions centered on reconstruction of technology as a system within a sociopolitical context, for instance the study of a Qing snuff bottle shown compositionally and microstructurally to have been made in Jingdezhen, transported to Guandong where it was enameled in compositions and a style characteristic of those of the far south, and probably offered as tribute to the court.

Much of the discussion centered on papers in which bulk analyses of glazes and bodies were evaluated by multivariate statistical methods to differentiate the products among various kilns or regions of China or to show evolutionary trends in raw material selection and use through time. Many papers reported neutron activation analyses, induced-coupled plasma mass spectroscopy (ICP-MS), Mossbauer, x-ray photoelectron spectroscopy (XPS), lead isotope, laser Raman microprobe, and other ways of detailing variation among ceramics. For instance, Shaoxing, Shangyu, and Shanglinhu were differentiated by Pr, Ce, and Nd, and the various Longquan wares by Gd, Ce, and Nd. Other papers reported Chinese, Thai, Vietnamese, and Southwest Asian ceramics found in Yangzhou (Jiangsu), Mantai (Sri Lanka), A'Ali (Bahrain), Julfar (United Arab Emirates), Samarra (Iraq), and other sites and attempted to relate these to the information published about ceramics made at particular production centers during specified time intervals. Relying on the large data base of compositional and microstructural information on Chinese ceramics, some studies sought to fit ceramic pieces of unknown date and kiln site that are currently in European collections into a culture-historical context. These studies were based on details of compositional and microstructural analysis coupled with stylistic analysis of finds mostly from dated tombs.

At each of the ISAC conferences, results of recent excavations have been reported that require relabeling of Chinese ceramics in museum collections. The simplistic picture of a few great wares produced at a few great kiln sites has been refuted repeatedly. At this conference, green-glazed yue wares believed to have been produced at Shanglinhu and sites in neighboring Zhejiang Province were reported to be manufactured at late Five Dynasties sites as well as at kiln sites in Anhui near Hefei and at the Huang-ni-tou kiln site in Jingdezhen (both Shanglinhu and Huang-ni-tou had been visited on previous conference tours). In addition, an

Eastern Han dynasty green-glazed yue-type ware reported at the last conference from excavations at Xiangyin Qingzhusi kilns in Hunan Province was confirmed by analysis to be similar to the classical yue ware, further complicating our understanding of the development of the southern tradition of green-glazed ceramics.

At the previous conference Tang dynasty three-color sancai wares were reported and analyzed from three sites: Qionglai (Sichuan), Tongguan (near Changsha), and Hangzhou (Jiangxi). For the 1992 meeting the kiln group of Rongxian (near Guilin in Guanxi) was studied; Song dynasty celadon, brown and multi-colored ware similar to Changsha, as well as Yingqing (similar to ware found at Jingdezhen) were made at the site. At Rongxian 60 molds for yingqing bowls were found; one was signed and two were dated to times equivalent to A.D. 1092 and 1207. This kiln group was shown, like the Changsha kilns, to be a pioneer in copper red decoration. In another surprise, Cizhou-style underglaze and overglaze painted decoration was found to have been produced in Quzhou (Zhejiang), and a folk kiln variant of Cizhou ware was reported at Hebiji (Henan). At the next conference, participants are hoping to hear more about white and green ware production in the far south, particularly in Fujian and Yunnan.

Materials scientists gave attention to several wares about which little technical information is available. Among these are Han and Roman lead-glazed wares, which are both near eutectic composition but on the compositional side of increased durability. This compositional similarity could be by experiment and design or by some mechanism of technology transfer. Information on Southwest Asian lead-glazed ceramics of the same period was sadly missing. Both low and high baria lead glaze compositions were reported for the Han Dynasty, and an unexpected and major decrease in durability was reported for lead release in lead glazes colored green with copper oxide.

A type of black-glazed ware, or jianyao, called "partridge spot," known only from ancient written records was reported at the conference. Not only were ancient sherds from excavations in Fujian available for study but factory replicas of this special type of jianyao were displayed, along with hare's fur and oil spot. Both the hare's fur and oil spot replications of glaze and body appearance are of excellent quality.

For the first time, industry scientists reported detailed analyses of gas compositions for the manufacture of yaozhou, or northern celadon and iron- and copper-containing, phase-separated glazes. Such information will have a direct effect on our understanding of hydrogen reduction, long used by Chinese to achieve reduction more effectively than with excess carbon. The latter entails achieving an excess of fuel and insufficient air to efficiently raise the temperature of a kiln whereas the former involves closing the kiln at the peak of firing and introducing water. Conditions for the production of Tang Tea Dust glaze were reported, as well as guan jun and the famous Qing dynasty glaze, which has areas of ox-blood red and mirror black and is known as San Yang Kai Tai. Firing curves were shown as well as the effects of trace additives.

One of the interesting aspects of the production of imperial wares, which were produced at special kilns, is determining whether specialized technologies were developed. This entails reconstructing aspects of such technologies and then determining how the wares differ from similar wares produced at folk kilns supplying the local populace, potter's village kiln sites supplying tribute ware for tax pur-

poses as well as for local consumption, or provincial economic centers with industrial capability. At the previous conference there was a dispute over whether Southern Song dynasty Guanyao was formed and then turned dry to its often sub-millimeter thickness, and whether it was bisque fired and then glazed. The latter has only been demonstrated for some Tang sancai in which the firing temperature of the body was higher than that of the glaze. This practice is alien to most of what is known of single-fire East Asian practice. At the 1992 conference, conflicting data on Guanyao from the imperial Suburban Altar kiln in Hangzhou of Southern Song produced a dispute over whether compositional heterogeneity was the result of multiple applied layers of glaze of differing composition, on segregation during drying of an applied glaze or local heterogeneity of raw materials. Any one of these may produce layered areas of compositional heterogeneity. Further information is required once analyses of remains of the imperial factory at Hangzhou are published, which is expected at the next conference. About four years ago, archaeologists found vats of premixed, unused glaze as well as unfired, glazed sherds (some of these were seen during the after-conference tour). Several participants had visited the recently opened museum in Hangzhou at the excavation site.

Pottery finds from several Neolithic sites were also reported along with their analyses. Some very early pottery from a site in Wu County, Jiangxi, as well as the well-known black-slipped ceramics from Liangzhu were discussed. However, no information was available on the recently excavated Late Palaeolithic period sites in Manchuria, especially Djerainor.

Many evenings of this conference were spent visiting rooms of attendees who had brought suitcases of sherds from excavations, so that frequently discussions could be pursued with the artifacts in hand. Examination of these sherds was a prelude to the tour. Each museum we visited had prepared a special storeroom exhibit of especially significant, controversial, or newly excavated finds. Most curators generously allowed handling of the pottery and sherds as well as granted permission for photographs to be taken, even of unpublished artifacts.

One talk on recent excavations given at the conference was a preview of what we were to see at the Nanjing Provincial and City Museums during the tour. Many pieces from the tomb excavations were published previously but without scales, so one of the revelations of the tour was the unexpectedly large size of many of the ceramics made as tomb offerings.

Yangzhou, our stop after Nanjing, is known as having been a trading capital at the time of the building of the Grand Canal and after. Marco Polo was an administrator in Yangzhou for three years, and we were grandly banqueted by the town of Yangzhou in a style of which he would have approved. Many Islamic sherds have been unearthed in Yangzhou, and results of their study have been reported in previous conferences. We were able to see and handle much of the Islamic collection as well as the earliest blue-and-white finds. Topics of discussion during the visits to the National Artifacts Bureau at Yangzhou Training Center and Yangzhou Museum included examination of Tang blue-and-white sherds with floral designs of Islamic inspiration as well as Chinese blue-and-white ware to argue such topics as the source of early cobalt motifs, cobalt compositions and sources as well as whether the application of the cobalt was over or under the glaze. In another discussion, differences between early whitewares from Xing, Ding, and Gongxian

kiln sites were argued. Several participants had analyzed these wares, and the technical, art-historical, and archaeological interpretations of the several experts alongside a fairly large sampling of excavated sherds imported into Yangzhou from the three kilns was enlightening. The Gongxian whitewares are yellower, often called “tooth-white,” and the bodies are rougher and higher in alumina than the other two types. The Xing whiteware is the whitest and is called “snow-white”; the iron content is about 0.4–0.5 percent and the RO and R₂O are about equal. The Ding white ware is “milk-white,” the iron content tends to be a little higher, and the R₂O is greater than the RO totals. Our visits were capped with special treats of local delicacies for which cuisine Yangzhou is famous.

The Zhenjiang Museum is in the old British Consulate and much of it is currently closed for rebuilding. However, an amazingly large ceramic collection of national-treasure quality was assembled on tables for our enjoyment and learning. Our visit ended with a special banquet.

Just as Jingdezhen is the porcelain capital of China, Yixing is the pottery capital. We visited the Yixing Museum, two factories, one Tang kiln, and one modern dragon kiln. The modern kiln was very efficient and had been fired in 1 day. It measures 35 m long by 1.5 m wide and is loaded through two side tunnels. The lower section is built on a very steep angle of about 30 degrees to induce rapid draft and climb in temperature, and the upper section has a lesser slope of 15 to 20 degrees, (slowing the draft and causing a more efficient temperature rise), which is typical of ancient kilns. This kiln was built at the museum with industry sponsorship and has been used to make replicate ware.

During our travels we were able to request that the bus stop at local brick kilns of the old domed variety that produce reduced gray-to-black roof tiles and, now only rarely, bricks. Recently practices have changed such that most buildings are being built of red brick produced in centralized, large, Hoffman-style kilns rather than the numerous, smaller, single-chamber domed kilns. Many modern pottery factories in the interest of efficiency have ceased to use old-style kilns or firing practices. Thus, many of these old brick kilns are an ethnographic link to ancient practices. We were able to visit an abandoned double-chamber cross-draft kiln, and an operating single-chamber updraft kiln that was in the final firing stage of hydrogen reduction. The kiln master said the kiln was about 50 years old and took about 5 days to fire.

Many conferences have centered on the study of Chinese ceramics during the previous year: one organized in northern China by David Keightly and others involving study of Lungshan ware, another by Ho Chumei at the University of Hong Kong on green-glazed wares from Southeast Asia, another by the Shanghai Museum on Ge ware with a visit to Longquan, and yet another on Korean ceramics at the Museum of Oriental Ceramics in Osaka. With so many conferences combined with lowered travel budgets and recession, it is no wonder that only 23 foreign participants were able to attend this conference. Five other foreigners canceled at the very last, and another large group who coauthored papers and registered were unable to make the final payment. However, attending the next conference of ISAC is strongly recommended for those who wish an understanding of the ceramics we appreciate and use as material culture, art, cultural heritage, and current economic value.

The proceedings are available in English or Chinese for US \$40 plus postage from Dr. Li Jiazhi, Shanghai Institute of Ceramics, 1295 Dingxi Road, Shanghai 200050, China (Fax 2513903, Tel. 25122990, TLX 33309 ASSIC CN). Volumes from previous conferences are also available at the same price.

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